

## Complete Summary

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### GUIDELINE TITLE

Screening for glaucoma in the primary care setting.

### BIBLIOGRAPHIC SOURCE(S)

Screening for glaucoma in the primary care setting. Washington (DC):  
Department of Veterans Affairs (U.S.); 2000 May. Various p. [29 references]

## COMPLETE SUMMARY CONTENT

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## SCOPE

### DISEASE/CONDITION(S)

Glaucoma

### GUIDELINE CATEGORY

Screening

### CLINICAL SPECIALTY

Ophthalmology

### INTENDED USERS

Advanced Practice Nurses  
 Nurses  
 Physician Assistants  
 Physicians

### GUIDELINE OBJECTIVE(S)

To help the primary care provider assess the relative risk of each patient in his or her care, and appropriately refer those patients at high risk for glaucoma

#### TARGET POPULATION

Veterans over 40 presenting to primary care

#### INTERVENTIONS AND PRACTICES CONSIDERED

Screening

1. Assessment of risk factors, including:
  - Age
  - Race
  - Family history
2. Eye examination, including:
  - Intraocular pressure
  - Optic nerve examination
  - Assessment of optic nerve function by visual field testing
3. Patient education
4. Referral to specialist

#### MAJOR OUTCOMES CONSIDERED

Not stated

### METHODOLOGY

#### METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

#### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not applicable

#### NUMBER OF SOURCE DOCUMENTS

Not stated

#### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)  
Weighting According to a Rating Scheme (Scheme Given)

#### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Grades of Evidence: Primary (Secondary)

- A. Randomized (Other clinical studies)
- B. Well designed clinical studies (Clinical studies related to topic but not in a population with diabetes)
- C. Panel consensus (Clinical studies unrelated to topic)

Each of the references listed in the document have undergone a thorough review and rating based on the scientific rigor of the article, clinical relevance of the material presented and the ability to generalize using this data.

## METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of Recommendation:

Level I a: Usually indicated, always acceptable, and considered useful and effective.

Level I b: Usually indicated, always acceptable, and considered useful and effective according to panel consensus.

Level II a: Acceptable, of uncertain efficacy, and may be controversial. Weight of evidence in favor of usefulness/efficacy.

Level II b: Acceptable, of uncertain efficacy, and may be controversial. May be helpful, not likely to be harmful.

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The methodology used to qualify the recommendations that follow is based on existing guidelines, evidence-based reports, randomized clinical trials (RCTs), recommendations based on national consensus, and papers published by specialty societies.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

The recommendations for screening for glaucoma in the primary care setting are organized into 1 major algorithm. The algorithm, the objectives and annotations that accompany it, and the evidence supporting the recommendations are presented below. The strength of recommendation grading (I-III) and level of evidence grading (A-C) are defined at the end of the "Major Recommendations" field.

#### [Algorithm - Screening for glaucoma in the primary care setting](#)

##### A. Every Veteran 40 Years of Age or Older Will Be Reviewed for their Risk of Developing Glaucoma

###### Objective

To screen for glaucoma in every veteran 40 years of age or older

###### Annotation

- Glaucoma is a neuropathy associated with:
  1. Optic nerve abnormalities
  2. Excavation of the optic disc
  3. Changes in the visual field
  4. Usually elevated intraocular pressure
- Primary open angle glaucoma is the most common presentation of glaucoma. In primary open angle glaucoma the chamber angle (drainage region) is physically open but "clogged" with extra-cellular debris, resulting in a backup of aqueous fluid.

###### Evidence

Strength of Recommendation: Ib; Level of Evidence: B (Javitt, 1995; Javitt, Metrick, & Wong, 1995).

##### B. Is the Veteran African-American?

###### Objective

To identify patients who are at greater risk of developing glaucoma based on ethnicity

## Annotation

The prevalence of primary open angle glaucoma in the:

- General population is approximately two percent
- African-American community is four to five times higher

This higher prevalence of glaucoma in African-Americans is particularly significant among working-age blacks. African-Americans when compared with non-African- Americans present with:

- Glaucoma at an earlier age
- Greater optic nerve damage
- Higher intraocular pressures

Since African-American veterans are at a higher risk of developing and presenting with advanced primary open angle glaucoma, screening efforts at the primary level should be directed toward identifying and referring these high-risk patients to an eye care specialist. Referral of high-risk patients to the eye care specialist is an effective method of detecting early glaucoma.

## Evidence

Strength of Recommendation: Ib; Level of Evidence: B (Martin et al., 1985; Tielsch, Sommer, Katz, & Quigley et al., 1991; Tielsch, Sommer, & Katz et al., 1991; Klein et al., 1991; Hiller & Kahn, 1975), C (American Academy of Ophthalmology [AAO], 1996).

### C. Is the Patient Age 65 or Older?

#### Objective

To identify veterans at high risk of developing glaucoma based on age

#### Annotation

Age is a risk factor for primary open angle glaucoma. Although the prevalence of this disease increases with each decade of life, the largest differential occurs between the 7th and 8th decades. In one study, prevalence increased from 0.9 percent in persons 43 to 54 years of age, to 4.7 percent in people over 75. The importance of age is particularly striking in the African-American community. Among African Americans, the prevalence of glaucoma increases from 3.14 percent in persons less than 60 years of age, to 12.2 percent in persons over 70.

#### Evidence

Strength of Recommendation: Ib; Level of Evidence: B (Tielsch, Sommer, Katz, & Quigley et al., 1991), C (AAO, 1996).

### D. Does the Veteran Have a Family History of Glaucoma?

## Objective

To identify veterans with a family history of glaucoma

## Annotation

Persons with a history of glaucoma in a first-degree relative have almost three times the risk of developing glaucoma themselves compared to the general population (age-adjusted odds ratio = 2.85). A first-degree relative is defined as a parent, sibling, or child. The relative risk varies depending upon the degree of consanguinity of the family member involved. The strongest association occurs with siblings and the weakest with children.

## Evidence

Strength of Recommendation: Ib; Level of Evidence: B (Armaly, Krueger & Maunder, 1980; Tielsch, 1994), C (AAO, 1996).

# E. Frequency of Examinations

## Objective

To recommend frequency of follow-up examinations for patients at increased risk for glaucoma but without the disease

## Annotation

Permanent visual loss from glaucoma can be prevented or postponed through early diagnosis and prompt treatment. The diagnosis of glaucoma is determined by:

- Measuring intraocular pressure
- Examining the optic nerve
- Assessing optic nerve function by visual field testing

As previously stated the most effective method of screening for early glaucoma is to target and evaluate high-risk populations on a regular basis.

The number of risk factors of an individual determines the risk of developing glaucoma and the frequency of screening exams. The most significant risk factors for glaucoma are:

- Age
- Race
- Family history of glaucoma

The following table summarizes the risk factors and severity of risk in glaucoma:

Risk Factors	Severity of Risk
--------------	------------------

	High	Moderate	Low
<ul style="list-style-type: none"> <li>• Age</li> <li>• Ethnicity</li> <li>• Family history</li> </ul>	All 3 factors	Any 2 factors	Just 1 factor
Eye examination frequency	Every year	Every year	Every 2 years

Patients at moderate to high risk should be examined yearly. Patients at low risk for glaucoma should be screened at least every two years.

Evidence

Strength of Recommendation: Ib; Level of Evidence: B (Abrecht & Lee, 1994), C (AAO, 1996, 1997).

#### F. Patient Education

Objective

To inform the patient on the lifelong consequences of glaucoma

Annotation

It is important to educate the at-risk veteran about glaucoma. The veteran should be aware of:

- Existing personal risk factors predisposing the development of glaucoma
- Rationale behind the need for periodic evaluations
- Need for careful and regular follow-up appointments
- Periodic review of the chronic, asymptomatic signs and symptoms of glaucoma

Educational pamphlets should be provided.

Evidence

Strength of Recommendation: Ib; Level of Evidence: C (AAO, 1996).

Strength of Recommendation:

Level Ia: Usually indicated, always acceptable, and considered useful and effective.

Level Ib: Usually indicated, always acceptable, and considered useful and effective according to panel consensus.

Level IIa: Acceptable, of uncertain efficacy, and may be controversial. Weight of evidence in favor of usefulness/efficacy.

Level IIb: Acceptable, of uncertain efficacy, and may be controversial. May be helpful, not likely to be harmful.

Grades of Evidence: Primary (Secondary)

- A. Randomized controlled trials (Other clinical studies)
- B. Well designed clinical studies (Clinical studies related to topic but not in a population with diabetes)
- C. Panel consensus (Clinical studies unrelated to topic)

#### CLINICAL ALGORITHM(S)

An algorithm is provided for:

1. [Screening for glaucoma in the primary care setting](#)

### EVIDENCE SUPPORTING THE RECOMMENDATIONS

#### REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

#### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The annotations, which accompany the algorithms in the guideline document, indicate whether each recommendation is based on scientific data or expert opinion. Where existing literature is ambiguous or conflicting, or where scientific data are lacking on an issue, recommendations are based on the expert panel's opinion and clinical experience.

### BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

#### POTENTIAL BENEFITS

- Early diagnosis and treatment of glaucoma will have a positive economic impact and help halt the progressive damage associated with glaucoma.
- Referral of high-risk patients to the appropriate eye care specialists is an effective method of detecting early glaucoma.

#### POTENTIAL HARMS

Not stated

### QUALIFYING STATEMENTS

#### QUALIFYING STATEMENTS



- This guideline, appropriate for population based medicine, is not intended to prevent practitioners from using their best judgment in the care of an individual patient. Rather, it seeks to establish verifiable referral objectives.
- The guideline is designed to be flexible, so that local policies or procedures—those regarding referrals to or consultation with eye care specialists—can be accommodated. Like most algorithms, this one cannot and should not be used as a rigid guideline for the diagnosis and/or referral of glaucoma patients to a specialist. Nor is it intended to supersede the clinical judgment of the primary health care provider.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Staying Healthy

### IOM DOMAIN

Effectiveness  
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Screening for glaucoma in the primary care setting. Washington (DC): Department of Veterans Affairs (U.S.); 2000 May. Various p. [29 references]

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

2000 May

### GUIDELINE DEVELOPER(S)

Department of Veterans Affairs - Federal Government Agency [U.S.]  
Veterans Health Administration - Federal Government Agency [U.S.]

### SOURCE(S) OF FUNDING

United States Government

## GUIDELINE COMMITTEE

Ambulatory and Primary Care Group

The Glaucoma Screening Working Group

## COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Working Group Members: James Orcutt, MD, PhD; William A Monaco, OD, PhD; Mary Lynch, MD; Jane Penny, RN; Sarah Ingersoll, RN, MBA; Marie Fingerette; J Tielsch, PhD

## FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

## GUIDELINE STATUS

This is the current release of the guideline.

An update is not in progress at this time.

## GUIDELINE AVAILABILITY

Electronic copies: Available from the [Department of Veterans Affairs Web site](#).

Print copies: Department of Veterans Affairs, Veterans Health Administration, Office of Quality and Performance (10Q) 810 Vermont Ave. NW, Washington, DC 20420.

## AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Pocket Card for ready reference and Summary Algorithms suitable for posting.
- Screening for glaucoma in the primary care setting - key points. Washington (DC): Department of Veterans Affairs (U.S.); 2001 Aug. 2 p.

Electronic copies: Available from the [Veterans Health Administration Web site](#)

Print copies: Department of Veterans Affairs, Veterans Health Administration, Office of Quality and Performance (10Q) 810 Vermont Ave. NW, Washington, DC 20420.

## PATIENT RESOURCES

None available

## NGC STATUS

This summary was completed by ECRI on February 9, 2001. The information was verified by the guideline developer on November 2, 2001.

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